

# DESERT

PLANT LIFE

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LITERATURE PRESENT AND  
PROSPECTIVE FROM  
SOUTH AFRICA, SWEDEN,  
HOLLAND, GREAT BRITAIN

NOTES ON HASSEANTHUS---I

*Reid Moran*

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*September, 1950*

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## LITERATURE PRESENT AND PROSPECTIVE FROM ABROAD

### SOUTH AFRICA

"The Aloes of South Africa", the long awaited publication by G. W. Reynolds is now announced for the end of this year or early 1951.

About 650 pages are planned, printed on art paper to the highest standards of typography and color reproduction. Of the latter there will be a minimum of 60, possibly 70. One of these, *Aloe Krapohlana* Marloth, part of the prospectus, shows the plant growing in the wild. An examination of the sample seems sufficient inducement to possess the entire work.

Part I includes a brief historical sketch up to 1652; maps and place names of the mid-seventh century; inland journeys from 1652 to 1681; Bergh's journeys from 1676 to 1699; Schryver's expedition; that of Simon van der Stel to Namaqualand and others.

Aloes connected with the Dutch East India Company and British rule as well as a Bushman Rock Painting all add their part to the special references.

Part II gives the classification of the 132 South African species of Aloe, under each of which will be given the species name and author, synonymy, pre-Linnean citations, full description based on plants in their natural habitats, herbarium material, distribution, medicinal uses together with notes of horticultural and general interest.

Each species, illustrated in black and white nearly all of them as the plants grow wild with flowers reproduced in natural size will be valuable features as there are 350 of these figures. A Glossary of Botanical Terms, together with an Index is included.

The author spent 18 years in the preparation, traveling over 100,000 miles throughout South Africa.

Field-Marshal Smuts has written the Foreword.

Nothing so important on the subject of Aloes has appeared since Berger's work in *Pflanzenreich* in 1908. Nor will there be anything to compare with it in all succulent literature since the publication of "The Succulent Euphorbieae" (Southern Africa) by Alain White, R. Allen Dyer and Boyd L. Sloane (1937).

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*The Journal of South African Botany* (October 1949) under "Plantae Novae Africanae" by R. H. Compton, Professor of Botany, University of Cape Town introduces two new succulents.

*Kleinia cephalophora* Compton (Compositae-Senecioneae) from the Cape Province Namaqualand (1945). According to the author, a small succulent evergreen shrub, glabrous and glaucous throughout, with numerous branches and basal shoots which are decumbent at the base becoming erect. Collected in the Richtersveld. A detailed drawing by Miss W. F. Barker and full page photograph by G. W. Reynolds suggest a *Cotyledon* or *Dudleya* in appearance. The flowers are quite distinct from all other *Kleinias*.

*Othonna intermedia* Compton. (Compositae-Senecioneae.)

First collected from Van Rhynsdorp Division, 1941, is shown in a full

Continued on page 83

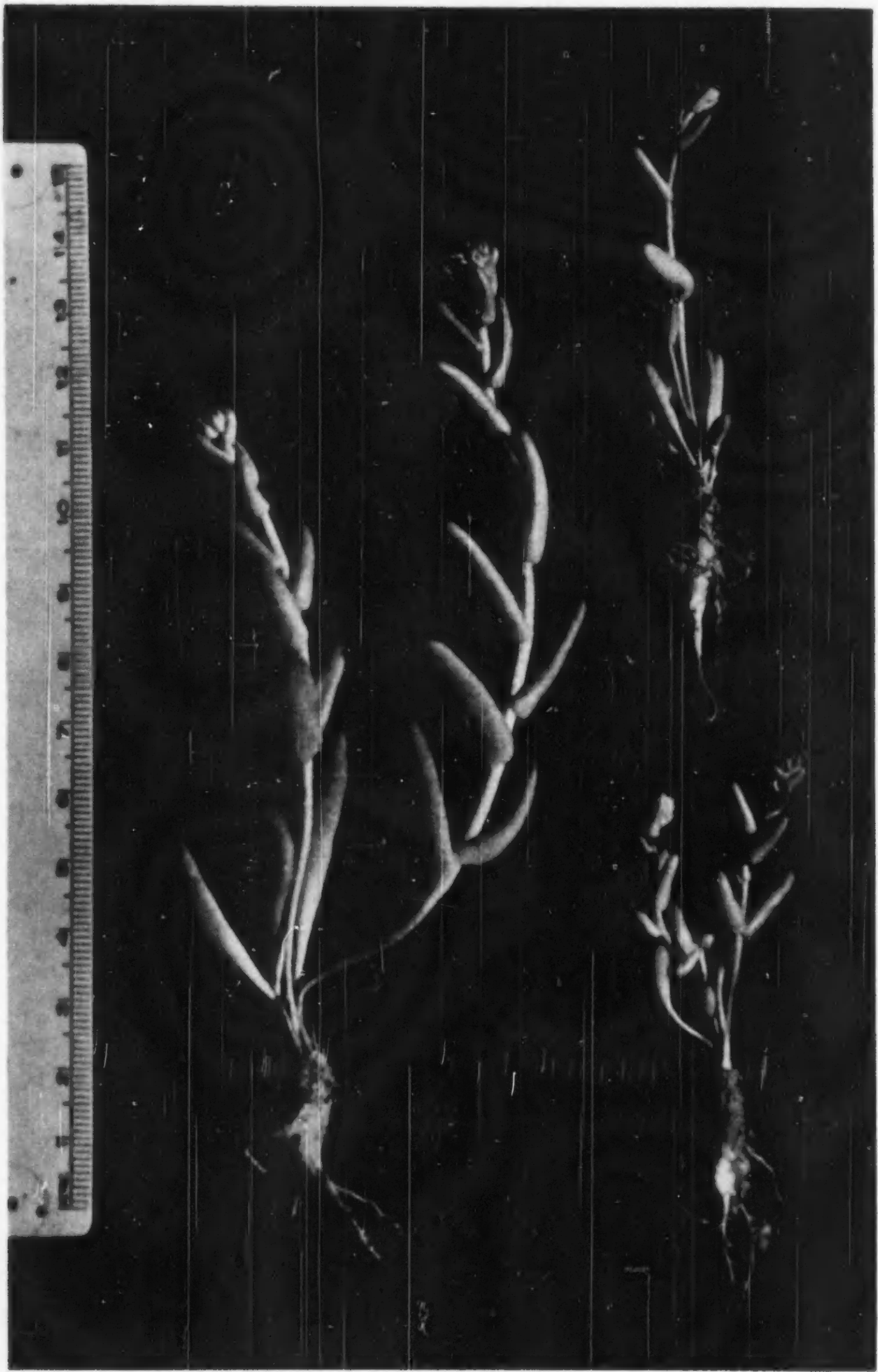


FIG. 1. *Hasseanthus Blochmaniae* subsp. *Blochmaniae*. Tetraploid form. Descanso, Baja California, April 10, 1949. (3210)



REID MORAN  
University of California  
Berkeley, California

## NOTES ON HASSEANTHUS — I

The genus *Hasseanthus* was revised in 1945 by Clausen, Moran, and Uhl.<sup>1</sup> Certain questions, however, could not be answered from available herbarium material; and field work was not then possible. Subsequent field study has answered some of these questions, brought to light other interesting facts, and, as might be expected, raised further questions.

Dr. Charles H. Uhl of Cornell University has made chromosome counts of many collections. He has kindly consented to the publication here of such of his data as are of particular interest. Thanks are due also to Mr. Joseph Sefton, President of the Sefton Foundation, San Diego, who made it possible to visit Santa Cruz and Santa Rosa Islands on the research ship *Orca*.

Type specimens and specimens of other collections are deposited in the Herbarium of the University of California at Berkeley. Unless otherwise indicated, collection numbers are mine.

### ***Hasseanthus Blochmaniae* (Eastw.) Rose subsp. *Blochmaniae***

In the 1945 revision, *H. Blochmaniae* was considered monotypic. With the naming of two new subspecies, a subspecific name becomes necessary for the original entity as well.

The subsp. *Blochmaniae* occurs at scattered localities near the coast from

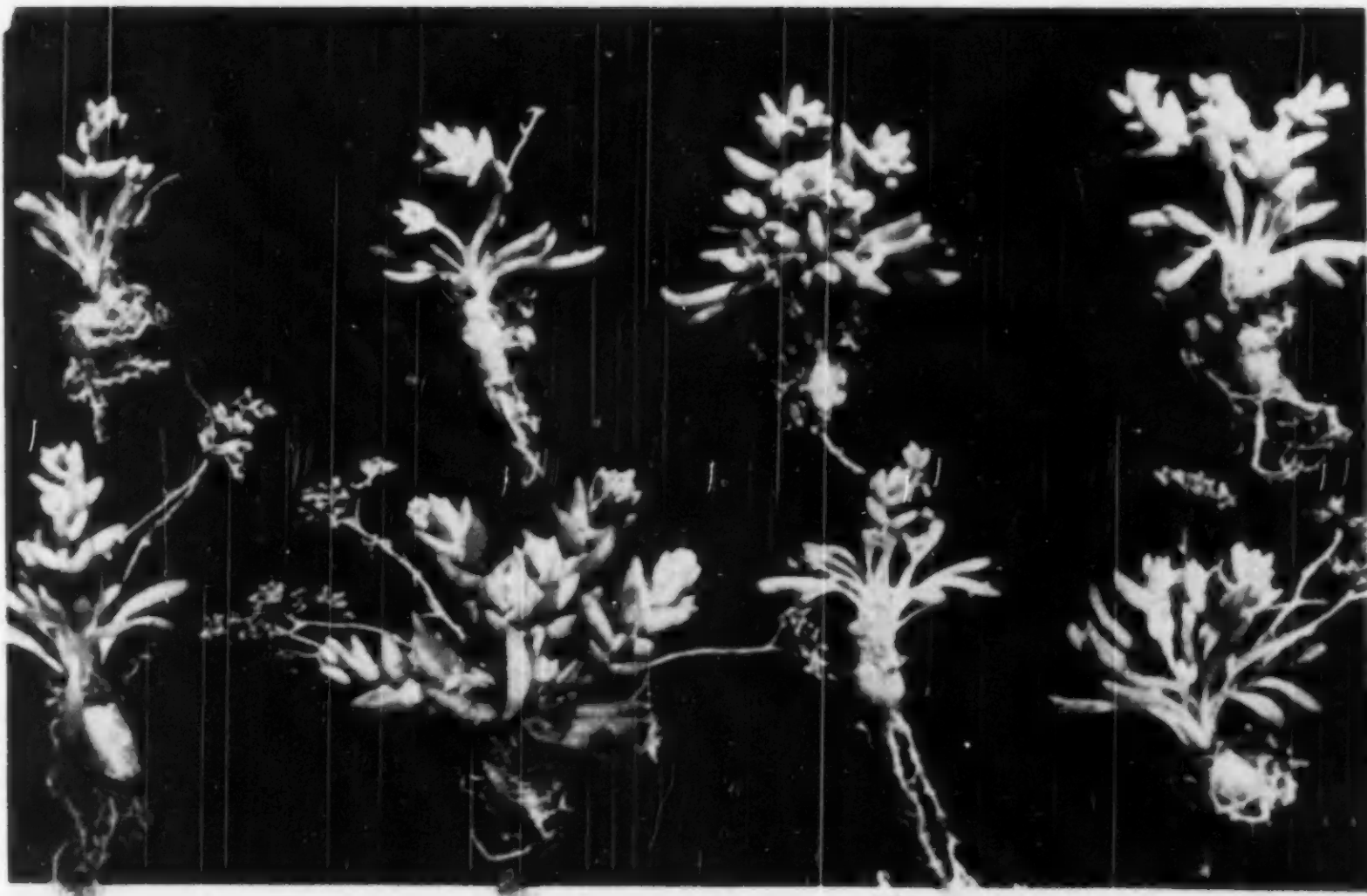


FIG. 2. *Hasseanthus Blochmaniae* subsp. *insularis*. Santa Rosa Island, California, March 19, 1950. (3352)

<sup>1</sup> DESERT PLANT LIFE 17:69-83. May, 1945.

San Simeon, San Luis Obispo County, California, to Descanso, Baja California, Mexico. Except those from Torrey Pines, all specimens cited as *H. Blochmaniae* in the 1945 revision belong to subsp. *Blochmaniae*. Additional localities are Malibu Beach, Los Angeles County (*Budlong*); San Clemente, Orange County (*P. Kamb*); Pacific Beach, San Diego County; and Descanso, Baja California. In the 1945 revision, specimens from Pacific Beach were wrongly referred to *H. variegatus* Watson. According to Mrs. E. S. Clements, the La Jolla locality, now invaded by the city, was about 3 miles north of the Pacific Beach locality.

In the spring of 1949 I studied large samples from seven populations throughout the range of subsp. *Blochmaniae*. Some slight general trends or clines seemed suggested, such as a southward increase in length of corms relative to their diameter. But these trends were generally overshadowed by local population differences having no evident correlation with geography.

Only the southernmost population, at Descanso, Baja California, seems sufficiently different to be worthy of special mention. Plants at this locality differ in having, on the average, more elongate corms, fewer, longer, and narrower rosette leaves, and narrower cauline leaves. For two collections from this locality (2109, 3210), Dr. Uhl found a haploid number of 34 chromosomes, whereas for ten other collections from localities throughout the range of the subspecies, he found 17. Thus the southernmost population is isolated from the others genetically as well as geographically. It might be treated as a subspecies, but the morphological distinctions do not seem great enough.

***Hasseanthus Blochmaniae* (Eastw.) Rose subsp. *insularis*, subsp. nov.**

A subspecies typica differt in foliis rosulatis numerosioribus (15-30), in caulibus floriferis juvenilibus foliisque eorum valde glaucis, et in caulibus floriferis maturis brevioribus (3-7 cm altis).

Corms subglobular to short-oblong, 1-2 cm long, 5-15 mm in diameter. Rosette leaves 15-30 (-50), clavate-oblongate, acute to obtuse, 1-2½ (-3½) cm long, 2-5 mm wide, 1-3 mm thick, the petioles 1-1½ mm wide, the base 1-4 mm wide. Floral stems 3-7 cm tall, ½-2 mm thick, leafy to within 1½-2 cm of the base, the young floral stems and their leaves grey-glaucous. Cauline leaves 10-18, the lowermost triangular-ovate to triangular-lanceolate, 6-12 mm long, 4-7 mm wide, the middle and upper ones usually proportionally narrower. Inflorescence usually of 2-3 spreading cincinni, each with 3-6 subsessile flowers. Flowers 11-16 mm in diameter, with a musky-sweet odor as in subsp. *Blochmaniae*. Calyx 3-5 mm high, 5-8 mm wide, rounded below, the segments narrowly triangular-ovate, 2-4 mm long, 1½-2½ mm wide. Petals white, elliptic, acute, 6-8 mm long, 2½-3 mm wide, connate ½-1 mm, widespreading in upper two-thirds. Filaments 3-5 mm long, adnate 1-1½ mm; anthers red, about 1 mm long. Scales about ½ mm wide. Carpels at anthesis suberect but separated, the ovaries 2½-3 mm high, with 5-8 ovules, the styles 1-1½ mm long. Follicles widespreading, the ventral margin nearly horizontal. Seeds brown, narrowly ovoid, longitudinally striate, about 1 mm long. Chromosome number:  $n=17$ .

TYPE COLLECTION: Old Ranch Point, Santa Rosa Island, California (near 33°57.7' N, 119°58.6' W), at about 10 feet elevation, March 10,



1950, *Moran* 3352. Grown at the University of California Botanical Garden. The type specimen is number 860,245 in the Herbarium of the University of California at Berkeley.

DISTRIBUTION: Known only from the type collection.

*Hasseanthus Blochmaniae* subsp. *insularis* differs from subsp. *Blochmaniae* principally in its more numerous rosette leaves, shorter floral stems, and more pronounced glaucousness of young floral stems and their leaves. In subsp. *insularis* the mean number of rosette leaves for 30 specimens was 21.8. The number of leaves was mostly 15 to 30, three specimens having more than 30 and three having fewer than 15, namely, 9, 12, and 14. In subsp. *Blochmaniae*, on the other hand, for 210 specimens from seven localities throughout the range, the mean number of rosette leaves was 5.8. The number of leaves was mostly 3 to 12, only three specimens having more than 12 and none more than 15. The highest sample mean was 8.1, at Estero Bay, San Luis Obispo County. The floral stems of subsp. *insularis* were 3 to 7 cm tall in cultivated specimens, and in collected specimens the few old stems remaining from previous years also fell within this range. In subsp. *Blochmaniae* the floral stems are mostly 4 to 12 cm tall, sometimes reaching 18 cm or more.

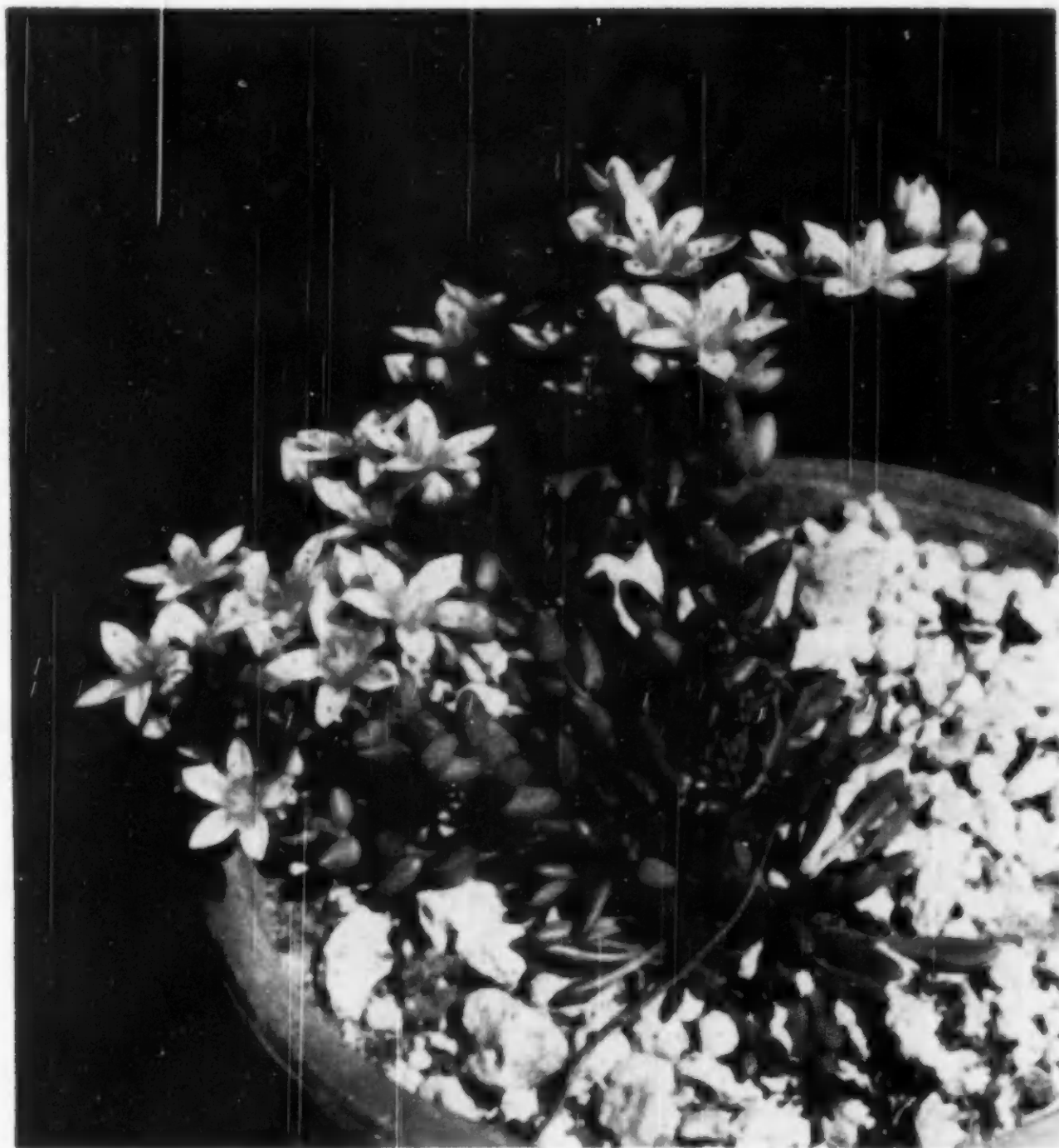


FIG. 3. *Hasseanthus Blochmaniae* subsp. *insularis*. Cultivated plant from Santa Rosa Island, California, May 6, 1950. (3352)

**Hasseanthus Blochmaniae** (Eastw.) Rose subsp. **brevifolius**, subsp. nov.

A subspecies typica differt in cormis oblongis,  $1\frac{1}{2}$ - $3\frac{1}{2}$  cm longis, diametro 1-6 mm; foliis rosulatis 7-15 mm longis, laminis subsphaeroideis; et foliis caulinis confertis, brevis, turgidis, minus quam sesquiplo longioribus quam latis.

Primary stems elongate and scarcely cormlike,  $1\frac{1}{2}$ - $3\frac{1}{2}$  cm long, 1-6 mm thick, sometimes branching downward but usually bearing only one rosette. Stems and leaves more or less red-flecked, usually glaucous above. Rosette  $1\frac{1}{2}$  cm in diameter, of 5-10 (-15) leaves, often buried in the soil except for the upper surface of each rounded leaf blade, withering long before anthesis. Rosette leaves rarely clavate, usually sharply divided into blade and petiole, 7-15 mm long, the blade ovate to orbicular or reniform, 2-7 mm long, 2-7 mm wide, 2-4 mm thick, rounded at the apex and on the margins and thus often appearing subglobular, subpeltate or somewhat tapering into the petiole, the petiole 3-10 mm long,  $\frac{1}{3}$ -1 mm wide, the base 1-2 mm wide, very thin. Floral stems 2-11 cm tall,  $\frac{1}{2}$ -1 mm thick at the base, to  $2\frac{1}{2}$  mm thick above, closely set with leaves to within  $1\frac{1}{2}$ - $2\frac{1}{2}$  cm of the base, the average internode about 2 mm. Cauline leaves horizontal or slightly ascending, triangular-ovate to suborbicular or rarely reniform, obtuse, turgid, the lowermost  $2\frac{1}{2}$ -10 mm long,  $2\frac{1}{2}$ -8 (-10) mm wide, 2-6 mm thick, flattened ventrally or somewhat concave toward the base, the margins rounded. Inflorescence commonly of 2-3 simple or bifurcate branches, the cincinni 1-4 cm long, with 3-10 flowers. Flowers 8-15 mm in diameter, with a musky-sweet odor as in subsp. *Blochmaniae*. Calyx hemispherical, 3-6 mm wide, 2-3 mm high, the segments triangular-ovate, subobtuse,  $1\frac{1}{2}$ - $2\frac{1}{2}$  mm long, 1-2 mm wide. Petals white, pinkish on the keel and yellowish toward the base, elliptic, subacute,  $5\frac{1}{2}$ -8 mm long,  $2\frac{1}{2}$ -3 mm wide, connate about  $\frac{2}{3}$  mm, widespreading but slightly ascending. Filaments  $4\frac{1}{2}$ -5 mm long; anthers about 1 mm long, red or orange. Carpels  $3\frac{1}{2}$ -5 mm high, including styles  $1\frac{1}{2}$  mm long. Follicles ventrally gibbous, widespreading, the ventral margin nearly horizontal. Chromosome number:  $n=17$ .

**TYPE COLLECTION:** Open area in chaparral near edge of mesa, Torrey Pines Park, San Diego County, California (near  $32^{\circ}55'N$ ,  $117^{\circ}15'W$ ), at about 350 feet elevation, April 9, 1949, *Moran 3206*. The type specimen is number 860,246 in the Herbarium of the University of California at Berkeley.

**DISTRIBUTION:** Sandy soil on red sandstone of mesas from Del Mar to La Jolla, San Diego County, at elevations of about 300 to 400 feet.

**ILLUSTRATION:** Desert Plant Life **8**:42. 1936. Right-hand drawing.

*Hasseanthus Blochmaniae* subsp. *brevifolius* differs from subsp. *Blochmaniae* principally in its longer and more slender "corms", shorter rosette leaves with subglobular rather than oblong blades, and shorter and relatively broader cauline leaves. Also, it flowers two or three weeks later.

This subspecies apparently is confined to flat areas of thin sandy soil on reddish sandstone capping the Linda Vista Terrace. Usually these areas are practically devoid of other plants and are strewn with reddish-brown concretions. Even within this distinctive habitat, the plant is local: it is absent from seemingly identical areas close to those where it does occur. Where



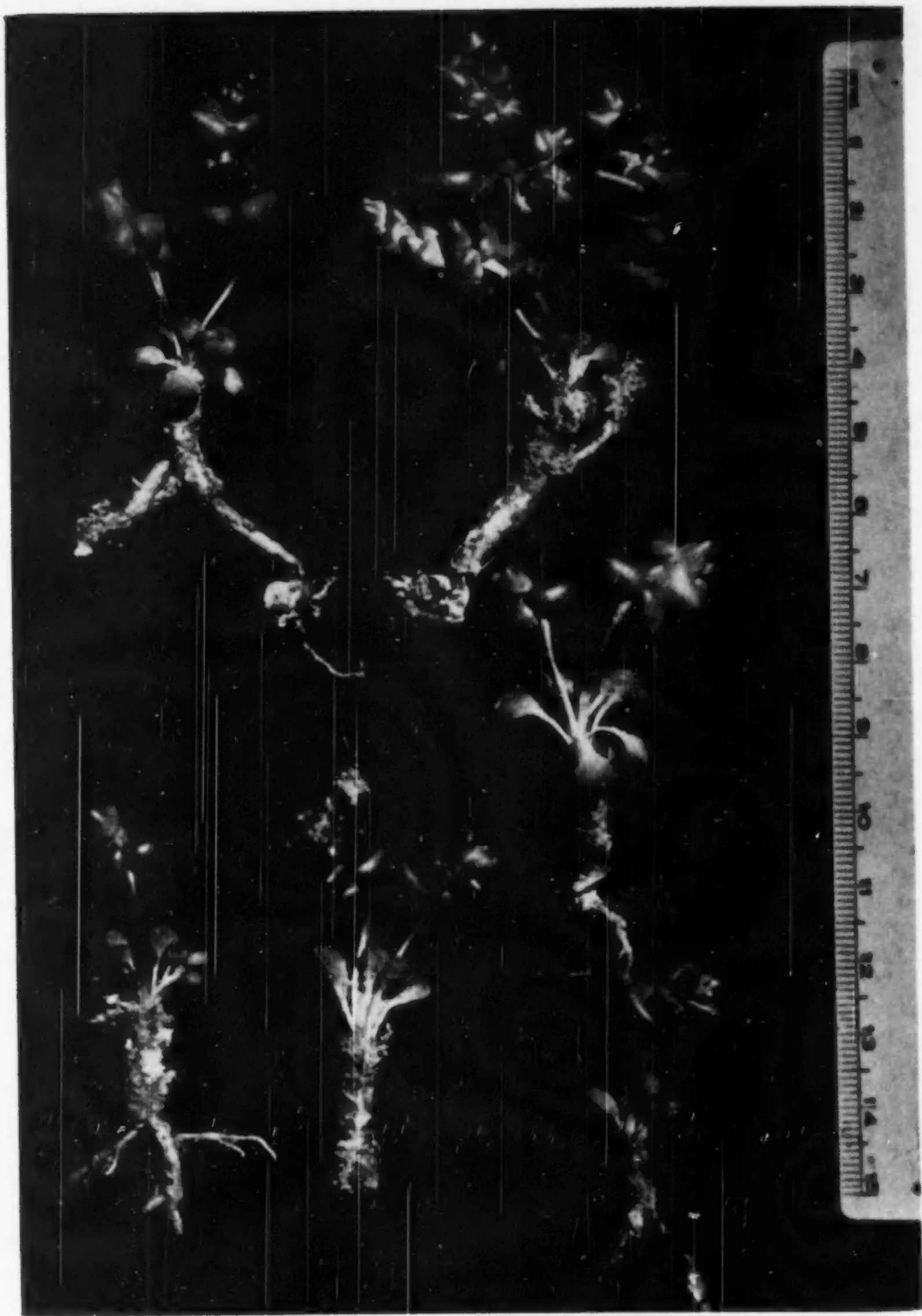


FIG. 4. *Hasseanthus Blochmaniae* subsp. *brevifolius*. Torrey Pines, California, April 9, 1949. (3206)

present, however, it is abundant. Similar areas occur to the north, to the east, and to the southeast; but as yet the plant has been found only at a few localities from Del Mar to La Jolla in an area about 7 miles long and 2½ miles wide.

Plants from Del Mar and Torrey Pines are very similar in appearance. Those collected on the south rim of McGonigle Canyon south of Soledad School are similar but smaller: the "corms" are 1-2 mm thick, the floral stems 2-4 cm tall, the cauline leaves 9-14 in number, 2-4½ mm long and wide, the flowers sometimes as few as two, 8-11 mm in diameter.

The population on the mesa east of La Jolla is somewhat different from the others. This locality apparently is within a mile of the La Jolla locality for subsp. *Blochmaniae*, whereas it is nearly 4 miles from Torrey Pines, the nearest other locality known for subsp. *brevifolius*. Here the plants sometimes grow in situations like those at Torrey Pines and Del Mar. But often they grow in depressions in the mesa, crowded together in a sod of *Selaginella cinerascens* Eaton, with *Crassula erecta* (H. & A.) Berger. These plants somewhat approach subsp. *Blochmaniae*. They flower three or four weeks earlier than other populations of subsp. *brevifolius*, and their rosette and cauline leaves average slightly longer and narrower. However, in leaf shape they are closer to subsp. *brevifolius* than to subsp. *Blochmaniae*; and their "corms" are long and slender and not intermediate. Thus the plants on the mesa east of La Jolla seem best referred to subsp. *brevifolius*, even though somewhat approaching subsp. *Blochmaniae*. And there is a fairly clear morphological break between the two subspecies, even though there is a suggestion that gene-exchange may occur.

Cultivated plants of subsp. *brevifolius* may vary in the direction of subsp. *Blochmaniae*. The rosette leaves may be more nearly clavate and thus less sharply delimited into blade and petiole, and the cauline leaves may be narrower in proportion to their length. At the same time, however, cultivated plants of subsp. *Blochmaniae* also may have narrower leaves. Thus in cultivated plants the relative differences in leaf shape may remain even though the absolute differences are not exactly as in wild plants.

The strikingly distinctive appearance of subsp. *brevifolius* tempts one to regard it as a distinct species. There seems no doubt, however, that it is more closely related to subsp. *Blochmaniae* than to other members of the genus. Furthermore, the view of close relationship is reinforced by the tendency of the two to intergrade and by the variation of cultivated material of subsp. *brevifolius* toward subsp. *Blochmaniae*.

The very young rosette leaf in subsp. *Blochmaniae* usually has a globular blade peltately attached to the petiole; with further growth it becomes clavate and thus is no longer sharply divided into blade and petiole. In subsp. *brevifolius* the leaf usually matures with a subglobular blade sharply set off from the petiole. On the mesa east of La Jolla, however, those plants that are especially crowded together may have clavate leaves. And in cultivation the leaves may be more nearly clavate, especially in plants from that locality.

*Hasseanthus Blochmaniae* subsp. *brevifolius* was first collected by F. W. Peirson (3094) at Torrey Pines in 1922. His specimens were annotated by W. L. Jepson as a new species of *Sedum*. In the 1945 revision, we failed to distinguish subsp. *brevifolius* from typical *H. Blochmaniae*.

Dr. Uhl has studied one collection from Del Mar (3316), three from Torrey Pines (2035, 2145, 3206), and two from the mesa east of La Jolla (2769, 3212). In each he found a haploid chromosome number of 17.



Continued from page 75

page drawing by Miss Barker, natural size and detailed drawing of other parts of the plant. A most interesting root structure is shown: a radish-like form, "dark, resiniferous, constricted above and crowned at ground level with a densely white-woolly cushion from which the leaves and peduncles arise." Usually found in the shelter of small shrubs, this herbaceous winter flowering *Othonna* is fairly frequent in the white quartz strewn plains of its habitat.

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## SWEDEN

*Acta Horti Gotoburgensis* XVIII (1950) carries an article, Frai Jorge, by C. Skottsberg, Director of the Botanic Garden of Gothenburg. In it are included the cacti collected by the author during his Chilean expedition. Determination was made by E. Werdermann and C. Backeberg, the latter describing a new species *Trichocereus Skottsbergii*.

The involuntary orthographical error of *Trichocereus chiloensis* instead of "chilensis" was cleared up, Chiloe being an island off the coast of Chile, but not the home of this particular cactus, found only inland of Chile proper.

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American authors are finding the grass greener, on the other side of the fence, judging by the contributions in our exchanges from abroad, as indicated in the following notes.

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## HOLLAND

From the rocky hills of the Peruvian coastal plain, comes *Maritinocereus gracilis*, a new genus and species described in *Succulenta*, July-August (1950) by John F. Akers of Los Angeles and A. F. H. Buining, President of the Netherlands Vereniging.

Plants are growing well in both authors' collections and shown to be profuse bloomers throughout the season, one instance being given where a meter long stem produced 70 flowers at a single time. These flowers are solitary, diurnal, medium large and orange scarlet . . . filaments zygomorphic, fasciculated.

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## ENGLAND

In the last issue of the *Journal of Great Britain*, July (1950) E. Shurly editor, is an account "Hunting Giants in Lower California" by George Lindsay of California. Among the giants he lists *Ferocactus Diguetii* *Pachycereus pectin-aboriginum* *Pachycereus Pringlei*, and gives incidents of the hunt, along with cactus uses, geographical and botanical data in connection. Several photographs are supplied.

The generic seed shape concept is further developed by J. Pinckney Hester of Arizona in his article "Mammillarianae, Addenda", also J.G.B. July (1950). The inevitable conclusion that each separate seed shape displayed by the various groups of *Mammillaria* is the immutable hallmark of a separate genus, as it is in the other divisions of Cactaceae is being advanced in the author's opinion. The only discordant note in the seed shape song may contain several sub-genera, some of them monotypic.

Mr. Hester threatens to name and describe several dozen new species of many genera of Cactaceae.

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